

IN THE CLAIMS:

Claims 1-7 (Canceled)

8. (New) An artificial bone material comprising:

a porous ceramic consisting of β -tricalcium phosphate; and a marrow cell incorporated in the porous ceramic.

9. (New) The artificial bone material according to claim 8, further comprising a cell growth factor contributing to osteogenesis, the factor being combined with the marrow cell.

10. (New) The artificial bone material according to claim 9, wherein the cell growth factor comprises at least one substance selected from the group consisting of a bone morphogenetic protein, a fibroblast growth factor, a fibroblast growth factor- β , an insulin-like growth factor, and a platelet-derived growth factor.

11. (New) The artificial bone material according to claim 8, wherein the porous ceramic has a porosity of 60% to 90%.

12. (New) The artificial bone material according to claim 11, wherein the porous ceramic includes macropores of size 50 μm to 1,000 μm that communicate to each other and micropores of size 2 μm or less.

13. (New) The artificial bone material according to claim 12, wherein the porous ceramic includes macropores of size 100 μm to 500 μm that communicate to each other and micropores of size 1 μm to 0.1 μm .

14. (New) The artificial bone material according to claim 11, further comprising a cell growth factor contributing to osteogenesis, the factor being combined with the marrow cell.

15. (New) The artificial bone material according to claim 14, wherein the cell growth factor comprises at least one substance selected from the group consisting of a bone morphogenetic protein, a fibroblast growth factor, a fibroblast growth factor- β , an insulin-like growth factor, and a platelet-derived growth factor.

16. (New) The artificial bone material according to claim 8, wherein the porous ceramic is produced by molding a β -tricalcium phosphate powder synthesized by a mechanochemical method as a raw material, and then sintering the resultant.

17. (New) The artificial bone material according to claim 8, wherein the marrow cell is a cultured cell collected from a patient and incubated.

18. (New) The artificial bone material according to claim 8, wherein the marrow cell is subjected to stimulation selected from the group consisting of electric stimulation and mechanical stimulation during incubation.

19. (New) The artificial bone material according to claim 8, wherein the marrow cell is inoculated in the porous ceramic by means of at least one condition selected from the group consisting of (a) to (c):

(a) inoculating the cultured cell under reduced pressure or increased pressure;

(b) inoculating the cultured cell with reducing and increasing the pressure alternately; and,

(c) inoculating the cultured cell with exerting a centrifugal force.

20. (New) A method of producing an artificial bone material, comprising:
incorporating a marrow cell in a porous ceramic consisting of β -tricalcium phosphate.

21. (New) The method according to claim 20, wherein the porous ceramic has a porosity of 60% to 90% and includes macropores of size 50 μm to 1,000 μm that communicate to each other and micropores of size 2 μm or less.

22. (New) The method according to claim 20, wherein the porous ceramic includes macropores of size 100 μm to 500 μm that communicate to each other and micropores of size 1 μm to 0.1 μm .

23. (New) The method according to claim 20, wherein the incubation is performed in the presence of a cell growth factor.

24. (New) The method according to claim 20, wherein the porous ceramic is produced by molding a β -tricalcium phosphate powder synthesized by a mechanochemical method as a raw material, and then sintering the resultant.

25. (New) The method according to claim 20, further comprising applying stimulation selected from the group consisting of electric stimulation and mechanical stimulation to the marrow cell during the incubation.

26. (New) The method according to claim 20, further comprising inoculating the cultured cell under at least one condition selected from the group consisting of (a) to (c) below:

- (a) inoculating the cultured cell under reduced pressure or increased pressure;
- (b) inoculating the cultured cell with reducing and increasing the pressure alternatingly; and,
- (c) inoculating the cultured cell with exerting a centrifugal force.

27. (New) The method according to claim 13, wherein the marrow cell is a cultured cell collected from a patient.